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TITLE: DRY CLEANING APPARATUS

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INVENTOR-INFORMATION:

NAME

SUGINO, SHIGEJI

ITO, TAKASHI

ASSIGNEE-INFORMATION:

NAME

FUJITSU LTD

COUNTRY

N/A

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ABSTRACT:

PURPOSE: To obtain a substrate surface of high cleanliness by a dry process by a construction wherein a substrate holder retained vertically substantially to a main surface of a substrate is disposed at substantially equal distances from a cleaning gas introduction port and an exhaust port of a quartz vessel and a heating source for heating the substrate and a light source for exciting a cleaning gas are disposed outside the quartz vessel.

CONSTITUTION: A cleaning gas introduction port 2 and an exhaust port 3 are located at substantially equal distances from a substrate holder 4 and the

direction connecting the cleaning gas introduction port 2 and the exhaust port 3 is parallel to a main surface of a substrate 5. A heating source 6 is an infrared heater, for instance, and heats one main surface of the substrate 5 from outside quartz vessels 1a and 1b. A light source 7 is an ultraviolet light source using a high-pressure mercury-vapor lamp, for instance. A mirror 8 has a dielectric multilayer film formed, for instance, and it reflects a light of a specific wavelength range out of ones from the ultraviolet light source and applies it to a main surface of the substrate 5 to be cleaned. An 8-inch Si wafer as the substrate 5 to be cleaned is set on the substrate holder 4, the quartz vessels 1a and 1b are fitted to each other, a chlorine gas is introduced from the cleaning gas introduction port 2 and the pressure thereof is adjusted to be 5 to 100Torr. The substrate 5 is heated to 100 to 600°C by the heating source 6, while ultraviolet rays of 250 to 400nm is applied by the light source 7 and the mirror 8 to the main surface of the substrate 5 to be cleaned.

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